

UNITRONICS UA 600 manual

60 watt r.m.s. I.C. complementary
audio power amplifier

IMPORTANT

BEFORE ATTEMPTING ANY KIT CONSTRUCTION, READ THE INSTRUCTION MANUAL OVER THOROUGHLY

The construction of this Unitronics kit does not require any special instruments or tools, all you require is a good 25 - 35 watts soldering iron with a small tip; a medium size screwdriver; a pair of diagonal cutters and pliers. A sensitive multi-meter or VTVM can be helpful. Other equipments such as signal generator, distortion analyzer, oscilloscope and output meter is only required if you intend to test your results.

We guarantee the circuit design and the components supplied in this kit, please check all components and transistors before assembly and make replacements if found defective. We shall be unable to guarantee individual kit-builders workmanship and their consequential results.

Much of the performance of this kit depends upon the degree of workmanship. Before a solder joint is made, the connecting parts must be clean and bright and mechanically strong; the solder iron must also be clean and free from excessive solder. Apply enough heat for the solder to flow thoroughly into the joint, avoid using excess solder and NEVER use acid-core solder or soldering paste. Check for solder flashes which might bridge the adjacent lands. Do not prolong solder as excessive heat can cause damage to components; burn insulating materials and peeling of copper lands from the PC board. After soldering, each and every joint must be carefully examined. This is very important as a large percentage of failures are caused by improper soldered joints.

WARNING

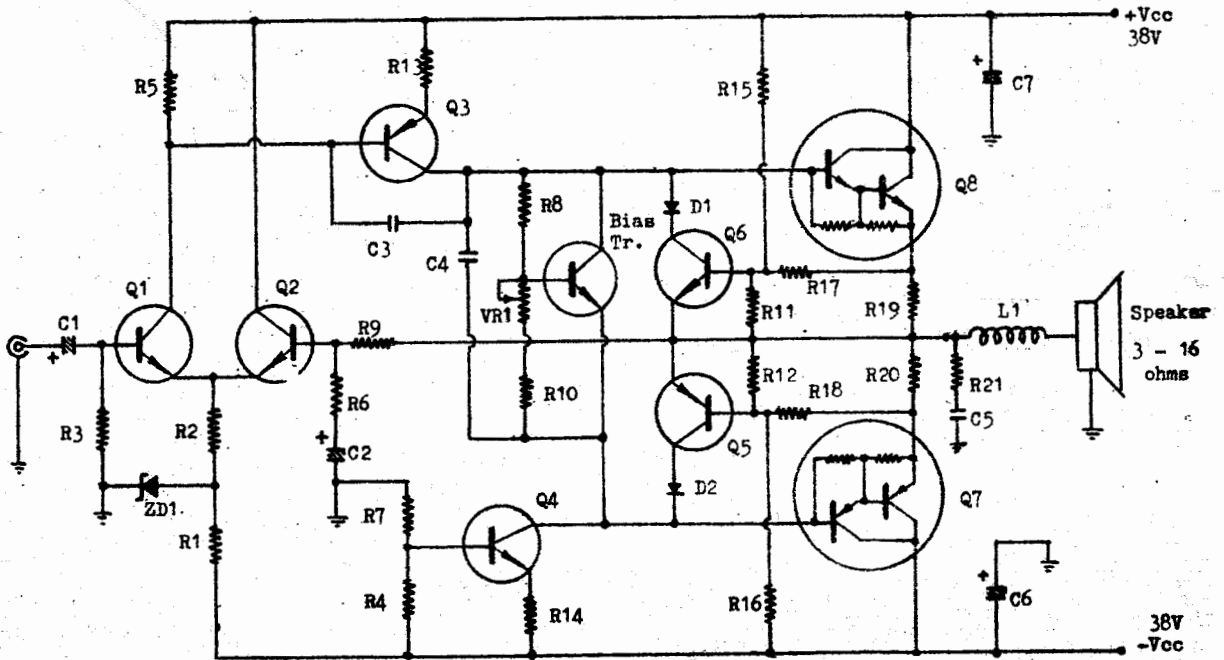
Do not use soldering paste flux or acid cored solder, we shall not service any unit if this is ignored. Use only good quality solder.

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SPECIFICATIONS

Power Output: Music (IHF).....	4 ohms 100 watts / 8 ohms 75 watts
Continuous	4 ohms 85 watts / 8 ohms 60 watts
Total Harmonic Distortion.....	less than 0.1% at 1KHz at 60 watts/8 ohms
	less than 0.04% at 1KHz at 30 watts/8 ohms
	less than 0.02% at 1KHz at 0.5 watt/8 ohms
Intermodulation Distortion: (70Hz and 7KHz signals mixed at ratio 4:1)	
.....	less than 0.05% at 30 watts
Signal to Noise Ratio (S/N)	better than 100db
Frequency Response	10Hz to 100KHz flat
	5Hz to 200KHz -3db
Power Bandwidth (60 watts output)	5Hz to 50KHz -3db
Input Sensitivity (1KHz for full output).....	1.0 volt
Input Impedance	10K ohms
Damping Factor (1KHz/8 ohms).....	more than 10C
Speaker Impedance Requirement	4 to 16 ohms
Power Requirement	split-supply +/- 38 volts DC

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UNITRONICS UA600 PARTS LIST

Semiconductors:

Q1 MPS9632
 Q2 MPS9632
 Q3 MPS-A56
 Q4 MPS-A06
 Q5 FCS9012
 Q6 FCS9013
 Q7 MJ2501
 Q8 MJ3001
 Biasing Tr. MJE9600
 D1 CDG22
 D2 CDG22
 ZD1 MZ9215

Condensers:

C1 10 mfd 25V
 C2 50 mfd 25V
 C3 50 pf 50V
 C4 0.1 mfd 50V
 C5 0.1 mfd 50V
 C6 100 mfd 50V
 C7 100 mfd 50V
 L1 - 30 turns 24 s.w.g. wire

Resistors:

R1 5.6K
 R2 7.5K
 R3 10K
 R4 1.2K
 R5 680 ohm
 R6 470 ohm
 R7 33K
 R8 2.7K
 R9 10K
 R10 470 ohm
 R11 120 ohm
 R12 120 ohm
 R13 10 ohm
 R14 120 ohm
 R15 10K
 R16 10K
 R17 330 ohm
 R18 330 ohm
 R19 0.33 ohm (1 ohm 1W X 3)
 R20 0.33 ohm (1 ohm 1W X 3)
 R21 10 ohm
 VR1 1K linear

Miscellaneous:

Printed Circuit Board .. 1 pc.
 Heat Sink 2 pcs.
 Silicone Grease 1 pk.
 Power Tr. Mica 2 pc.
 Power Tr. Washer 4 pcs.
 Biasing Tr. Mica 1 pc.
 Biasing Tr. Torque Washer
 1 pc.
 Transistor mounting screws
 1 pk.
 PC mounting screws 1 pk.
 lead out connector pins. 1 pk.
 Lead out wires 1 pk.
 Solder 1 coil

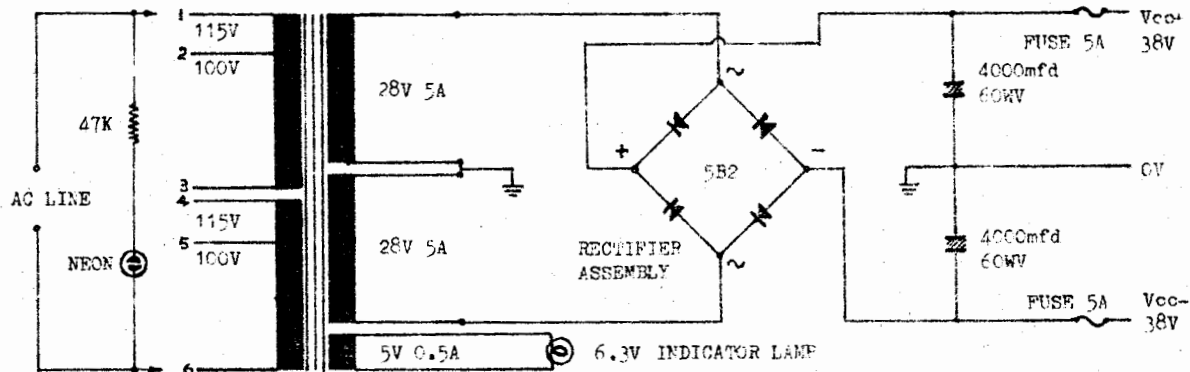
Instruction Manual..... 1 copy

IMPORTANT:

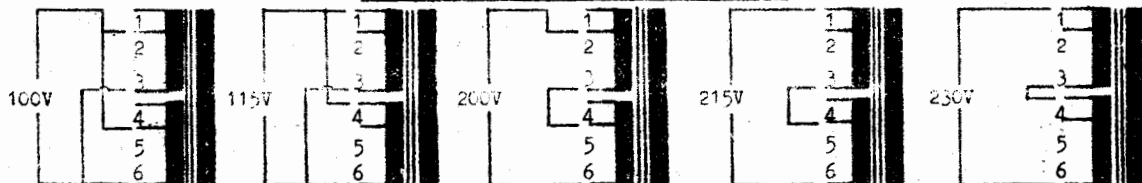
Check all transistors and part
 before assembly; observe the
 polarity of condensers, etc.
 Do not use acid-core solders.

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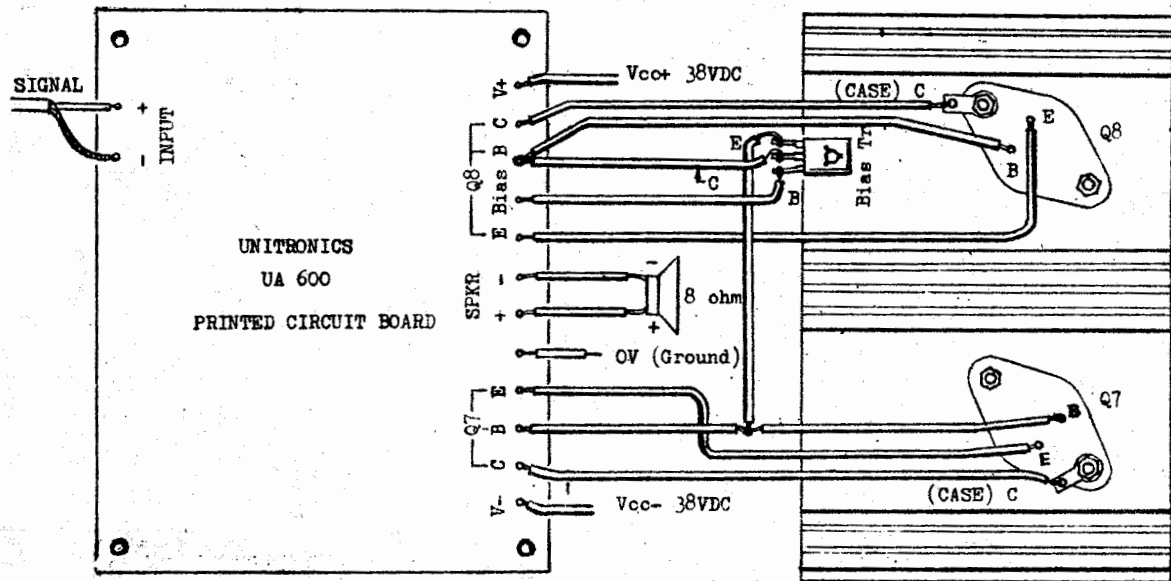
UNITRONICS POWER SUPPLY MODEL P50A



A.C. CONNECTIONS FOR VARIOUS VOLTAGES

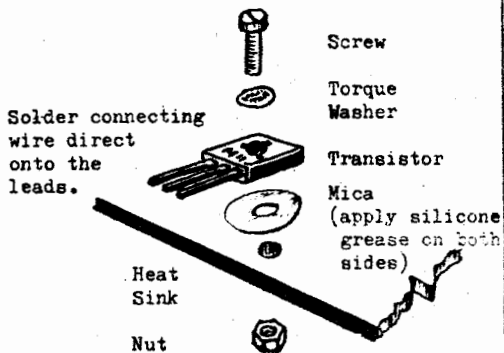


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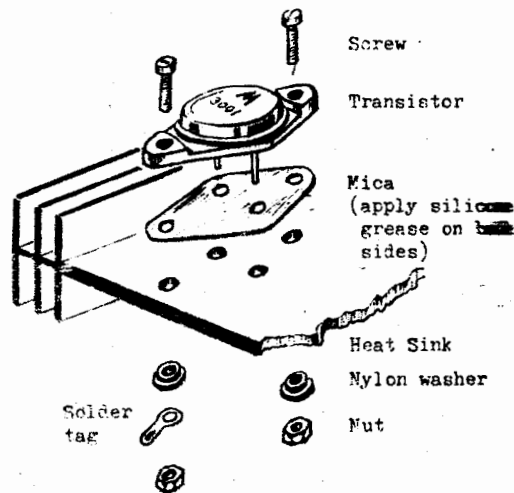
COMPLETE PRINTED CIRCUIT BOARD INTERCONNECTINGS

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Note: Be sure that the torque washer is installed; do not over-tighten or it might damage the transistor. Maximum tighten torque: 6ft. lb.

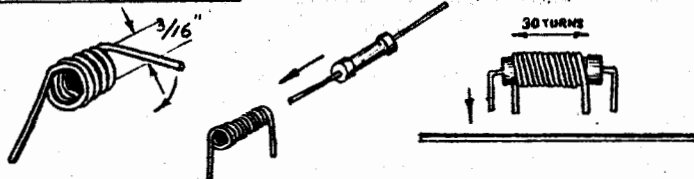
Biasing transistor mounting procedure



Power transistor mounting procedure

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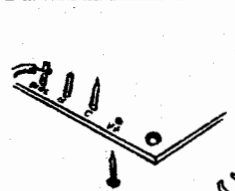
L 1 Winding Procedure:



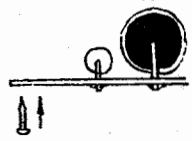
Wind 30 turns of 24 s.w.g. wire on 3/16 in. diameter.

and

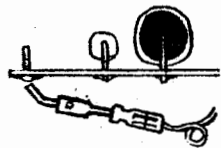
Pass the 10 ohm 1W resistor through and bend to fit P.C.



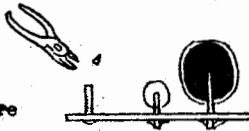
Lead-out pins mounting procedure



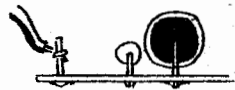
1. Push the pin in.



2. Solder to the PC.



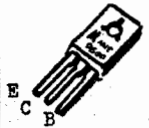
3. Cut off the tip.



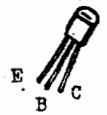
4. Connect the wire.



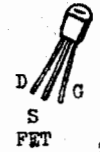
Metal Can Power Transistors



Biasing Tr.



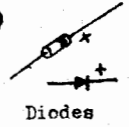
Plastic Trs.



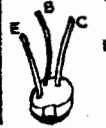
Zeners



Zeners



Diodes



Epoxy Transistors



Transistor Leads Identifications